

CALIFORNIA MINING JOURNAL.

DEVOTED TO MINING, MISCELLANEOUS LITERATURE, THE USEFUL ARTS AND SCIENCES.

VOLUME I.

GRASS VALLEY, APRIL 1, 1856.

NUMBER 1.

California Mining Journal,
PUBLISHED MONTHLY,
AT GRASS VALLEY, NEVADA COUNTY, CAL.
W. B. BWER, EDITOR.

TERMS.

One Dollar and a half per annum in advance. Single copies 25 cents each.
General letters and communications should be directed to W. B. BWER, Grass Valley, Cal.

AGENTS.

A. WIDLOWSKI is our authorized Agent to transact business for this Office in Nevada and throughout all the upper portions of the Country.
GILBERT & KANE are our Agents in Sacramento.—They may be found at the Post Office Literary Depot, Third St., next door to the Post Office.
J. H. PIERCE is our Agent in the City of San Francisco.—He is authorized to receive advertisements and receive for the same. He is to be found at his desk in the Iron Building, opposite the Pacific Express Office, up stairs.

Age.—We would earnestly solicit the aid of all interested in Quartz Mining, to assist us in the effort we are making to collect facts which may be useful to all, and shall feel under special obligation to any one who will furnish us with any items of interest in relation to the business. Letters and expressions may be addressed to us either by Mail or Express.

A liberal discount will be allowed to any person who will forward us subscribers, with an accompanying remittance. Age.—We are sending our "Travelers" Agents! Persons forming Clubs in their own home state neighborhood can retain the amount over four dollar subscription.

Subscriptions and names may be forwarded direct to this Office by Mail or Express, or to W. B. P. Fisher, our regular advertiser Agent in San Francisco, or Messrs. Gardner & Kirk at Sacramento.

Age.—No letter paper can be had for mailing to friends in the Atlantic States, as from no other can they obtain so full and complete information with regard to the mines, a matter of paramount interest to all Atlantic readers of California papers.

Age.—In consequence of the change in the form of the Journal, we again commence with Vol. 1, No. 1.

To Correspondents.—Our Paper.

We have received numerous letters from various parts of the State since issuing the first number of the "Mining Journal," encouraging us to persevere in our effort to establish a paper which shall be an exponent of the mining interests of the State, and a medium through which persons engaged in mining and its kindred interests may effect an interchange of views, so that the experience and knowledge collected by each may be thrown into a common fund for the benefit of all. No one can be more fully aware than ourselves of the feebleness of the effort, so far; but from the assurances which we have received from various quarters, of future assistance, we feel quite confident that we shall soon be able to place before those interested a paper which shall come fully up to the desired standard of usefulness.

We are now making arrangements to establish regular and reliable correspondents at all the important mining points throughout the State; and shall soon have our plans sufficiently matured to be enabled to give our readers regular monthly reports of the progress both of placer and quartz mining. It is to the latter branch of mining that we purpose more particularly to give our attention, as upon that, pre-eminently, must we look for the future permanence and prosperity of the State.

We are under many obligations to numerous friends who have kindly interested themselves in behalf of the "Journal." We shall ever be pleased to hear from all who may feel interested in its success;—either in the way of communications designed especially for publication, or by way of advice with regard to the method of conducting the paper—its manner or its matter. It is in accordance with numerous suggestions, thus proffered, that we have changed its form from a folio to a quarto. In its present form it will be found much more convenient for preservation, &c.

Several have suggested a change from

monthly to semi-monthly. In reply we would say that such was our original intention.—We shall issue the paper semi-monthly just as soon as its circulation will warrant the change.

Our correspondent "W. P. J." Sutter Creek, Amador Co., has our special thanks for the list of subscribers forwarded, and the accompanying remittance. He will excuse us for the liberty we have taken in making the following extract from his letter for publication:

"There are in operation in this vicinity some fifteen quartz mills, doing, on an average, a good business; in all, by recent experiments, I am convinced that the mills are losing a large per cent of their gold. Hence being convinced of the necessity of improving the present process of treating the ores, and of a full and frequent interchange of discoveries and experiments in, and views of the business, I hail with pleasure the California Mining Journal," as the medium and source of such interchange of views. Believing that the Journal may, and hoping that it will, be the instrument of vast improvement to the quartz interest of this State, I hope that every person engaged in the business will constitute himself a committee of one to promote the circulation and interest of the same, and thereby serve his own interest."

Mining Casualties.

It is a painful task to record the frequent occurrence of fatal mining accidents, as the reports of them come to us from all parts of the mines. From the frequency of these occurrences it is most certain that miners do not use sufficient caution in their labors, especially in working under high banks. Accidents from the caving in of banks are of much more frequent occurrence than those occurring in drifts. The danger of neglect in the latter is so imminent and apparent that the utmost caution is observed, and the drifts are kept constantly and securely timbered; but there is a seeming security in an apparently solid bank of earth, which, with the openness of daylight around him, takes from the miner that sense of danger which he ever feels when working under ground.

In the list of fatal casualties enumerated below, eleven in number, every one has occurred above ground, in open day light, where the slightest precaution would have been sufficient to have avoided all danger.—This enumeration we have collected from our exchanges during the past month. Many no doubt have escaped our observation, and many others in all probability have never found their way into the papers at all. The list is a fearful one, and should serve as a warning to miners to be upon their guard.—We shall continue the list hereafter, and endeavor so far as practicable, to proscribe, which, in the present instance we have generally neglected.

KILLED.—Wm. Moore was killed at Jim Crow Canon, on the 15th ult., by the caving in of a bank, which lacerated his leg and thigh in such a horrible manner as to cause his death in a few hours. He was a native of Campbell county, Georgia, aged 28 years.

The "Sonora Herald" chronicles the account of an accident which occurred at Tinabucton, near Sonora, as follows:—"A fatal accident occurred here on Saturday, resulting in the death of an Irishman named Finnigan, who was buried about six feet deep, by the caving in of a bank near which he was working. He saw the bank starting and attempted to leave, but his foot tripped and he fell, and was overtaken by the bank, which killed him instantly. He could not be extricated for several hours."

A man named Richard Morris, says the Sierra Citizen, was killed at Brandy City by the falling of a tree, which had been undermined. He lived but about an hour and a half after the accident occurred.

The "Sonora Herald" of a late date says:

"A Frenchman was killed at Robinson's Ferry, by a rock falling upon him while he was engaged in mining. His body was brought to this city and interred in the Catholic Cemetery."

The Placer Herald says that a negro named "Cupid" was killed by the caving in of a bank by which he was sluicing near Greytown. The poor fellow had just redeemed himself from slavery, and was earning his first day's wages as a free man.

The Trinity Journal, of March 1st, says:—"A miner named Charles Odgers, while working his claim on Red Hill, north of town, on Friday 22d, was instantly killed by the falling of a bank upon him. Every effort was made to remove the earth from his body, but some 20 minutes elapsed before this could be done, and when found life was extinct. A large concourse of miners followed his remains to the grave. He was a native of England, and came to this State from Michigan. He was about 31 years of age."

The Columbia Gazette says:—"Ellis A. Mickey was killed in a mining claim on San Diego Gulch, beyond the Canonade Claim. A large boulder, of several tons, fell from above where the unfortunate man was at work, and crushed him. The rock struck him on the neck and shoulder, as he was in a stooping position, breaking his neck, right shoulder, collar bone, arm and right leg, and killing him instantly. Mickey was from Ohio, and it is said, came originally from Pennsylvania."

An exchange chronicles the following occurrence at San Juan:—"A young man by the name of John H. Barlow from Dutchess Co., N. Y., was instantly killed by the falling of a bank, in the Gold Cut. He had done well and was making arrangements to leave and join his friends at home, in May next. He received a letter from his sister urging him to return, the night before he met with his untimely death."

The Calaveras Chronicle says:—"It is a painful task to record the accidental death of two industrious miners on Monday and Tuesday of the past week, caused by the caving in of banks of earth. One Mr. J. R. James, of Jesse Maria, and the other a young German, named Zetzer, near Campo Seco. The funeral obsequies in each case were conducted with much solemnity by their bereaved companions."

On Friday, the 14th inst., a man named Thomas Fox was killed at Badger Hill, Lough & Ready, by the caving in of a bank. He was twenty-three years of age, and from Platte county, Missouri.

In addition to the above fatal accidents, we have also seen chronicled within the same time the following lesser casualties:

By the Yreka Union:—"A drift in which Mr. Bannister and Capt. Walker were working on Shasta river, gave way and fell in upon them, crushing the foot of Mr. Bannister and fracturing both of Capt. Walker's legs. We learn that it is doubtful whether Capt. Walker will recover."

By the Trinity Journal of March 1st:—"Edward Bray, a miner, on Oregon Gulch, was brought into town on a litter, having been most terribly mangled by the caving in of a bank while at work on his claim."

AURIFEROUS QUARTZ.—The editor of the Iowa Hill News has seen some specimens of black and white quartz of extraordinary richness. They were taken from a lead just discovered within a mile or two of Iowa Hill. This discovery is certainly of great importance to Iowa Hill; and if there are really quartz leads in the vicinity of sufficient value and extent to justify the erection of mills, they will prove a source of wealth to the community.

Coal near Acapulco.

We have received a communication from a gentleman residing at Alpha, who gives us the particulars of the discovery of a vein of coal which he made about a year since, while in Mexico. The location is some 200 miles northwardly from Acapulco, and about 25 miles from the sea coast. The indications were that it was abundant. The country is gently undulating, and one over which good roads might easily be made. Our informant would undertake to guide any party to the spot, and thinks that a sufficient quantity of coal can be procured to test its quality at a small expense. From the description given us, the location of the mine must be in the immediate vicinity of Zacatlula, a port on the Pacific, about 200 miles north west of Acapulco. We should be pleased to hear from our friend, to communicate with any person who might wish to learn further particulars with regard to the discovery, with the view of developing the same. Any amount of Mexican laborers can be had in the neighborhood at a very low compensation.

Shipment of Treasure.

Feb. 20—Per Sonora.....	\$1,490,847
" " Uncle Sam.....	272,583
Total.....	1,753,430

March 5—Per Golden Gate.....	\$1,611,451
" " Brother Jonathan.....	370,000
Total.....	1,881,451

March 20—Per J. L. Stephens.....	1,829,444
" " Cortez.....	111,916
Total.....	1,941,360

Grand Total.

The shipments of Treasure for the first quarter of the present year, by the steamers of the 20th inst., have amounted in a fraction of \$11,000,000. Considering the unfavorable season, and the increasing calls for home investments, the above result must be looked upon as highly favorable, and affords the most substantial proof of the continued and increased productiveness of the mines.

STRIKING IT RICH.—The National Mining Company, on the American Hill, in Nevada, got down on Thursday week and found a very good prospect. From the dirt taken out of the bottom of their shaft, they realized seven hundred and eighty dollars. This is what we should call striking it rich. We have passed over this hill scores of times, before we saw a pick was struck in it, when it was used mainly as a place for gathering wood and burning charcoal. It has since proved one of the richest localities about Nevada, and is now turning out its thousands of dollars daily,—which in all probability will soon amount to a total of millions.

A NEW MATERIAL FOR FLOUR.—The French have discovered a chemical process by which the common horse chestnut is deprived of all its astringency and bitterness, leaving an almost tasteless and white residuum, highly nutritive, and which is susceptible of being reduced to a very excellent flour like wheat. The starch made from it is quite equal to that of wheat flour, and it contains more "body." Added to wheat flour in the proportion of about 37 per cent, it produces most excellent bread. From the large yield of these chestnuts in France and in other European countries, and the great demand for starch in calico and paper making, and in various other arts, the horse chestnut promises to become of great utility.

AND YET ANOTHER.—The thirty-eighth planet between Mars and Jupiter has just been discovered at Paris, by M. Chacornac.

Interesting Rain Statistics.

The great index of the yield of gold in California is the "Rain Gauge." Without water the miner can do but little towards extracting the precious metal from the earth; hence it is of the utmost importance that all engaged in mining, should become thoroughly acquainted with all the phenomena and facts connected with this branch of meteorology in California.

But little is known of the periodical fall of rain in this State previous to its occupation by our countrymen, except what can be gleaned from uncertain tradition, unaided by even the simplest scientific observations.—Since the commencement of 1851, fall and careful meteorological observations have been made by several scientific gentlemen in various parts of the State—mostly, however, in the Sacramento and San Joaquin valleys, and on the sea coast.

The following interesting statistics have been carefully prepared by Dr. Henry Gibbons, of San Francisco, and were first published in the Herald of that city. The Doctor has observed with great care, and his conclusions are entitled to full confidence.—The amount of rain that fell in each month is expressed in inches and hundredths of an inch, determined by the scale of a pluviometer, placed in a favorable position:

MONTH.	1851.	1852.	1853.	1854.	1855.
Jan.	.005	.050	.411	.430	.000
Feb.	.055	.012	.116	.841	.464
March	.188	.540	.481	.317	.431
April	.114	.019	.595	.331	.539
May	.009	.050	.032	.092	.000
June	.000	.000	.000	.065	.000
July	.000	.000	.000	.000	.000
Aug.	.002	.000	.000	.000	.000
Sept.	.100	.000	.000	.000	.000
Oct.	.018	.080	.010	.212	.000
Nov.	.214	.531	.143	.040	.115
Dec.	.707	.1190	.205	.038	.545

Total. 15.12, 25.60, 19.03, 22.13, 27.80

The quantity fallen in each winter prior to the first of February, and the quantity subsequent to that date, are thus represented:

Before Feb. 1.	After Feb. 1.	Total.
Inches.	Inches.	Inches.
7.01	4.06	7.12
7.01	11.34	33.46
10.15	15.35	23.80
14.72	16.68	24.10
15.04	11.90	26.94

It appears from these tables that we have had a greater quantity of rain this season, than in any other on the list except that of 1852-53; also that the average quantity that has fallen after this date is eleven inches. In every year there has been copious rains in March, and mostly in April. It is rather singular that the spring rains have regularly increased in amount for five years. July is the only month entirely without rain. The annual mean is near twenty-two inches, which is rather less than the lowest amount ever known to fall in the Atlantic States, and rather less than half the Atlantic mean.

Rubies.—The San Francisco Herald says that a young man by the name of H. Merrill, while prospecting in a dry place for gold among the hills of the Coast range, near the San Antonio mines, washed out four good sized, beautiful rubies from one pan of earth. He obtained from the same pan a very respectable prospect of gold.

Rubies have been found in Gold Run, near Nevada. Garnets of a very superior quality have also been found in the vicinity of the Sugar-loaf Hill, near Nevada. Both the rubies and garnets however that have been found in this vicinity are not of sufficient size or fineness to give them much value.—We presume that such is the case with the rubies recently found near San Antonio.

Appros.—of rubies, we append the following paragraph, taken originally from the Californian Citizen, which, in speaking of a late reception of the English Embassy by the Burmese King, says:

"The only thing remarkable at the interview was an inanimate object, and that was a ruby in the centre of the pygoda crown of his Majesty. It was as large, if not larger, than a hen's egg, and far more valuable than the great Koh-i-noor. It was beautifully cut,

and almost as round as a marble. It was torn off the ear of the Karen Queen by Alompra. It was a pendant, being suspended by a wire passing through her right ear. It is of the purest water, and more than two thousand years old, if the traditions concerning it are to be believed. It came originally from Saman, and belongs to the Great Garuro King, Mung Sa, who ruled the whole of China India. This ruby will, I prophesy, in ten years be worn by Queen Victoria.

WATER MIXING COMPANIES.—What has become of the Central Board of the Mining Water Companies of this State, appointed at the Convention of persons interested in water enterprises, held at Sacramento about a year since? We believe it was made the duty of this "Board" to invite the co-operation of all the companies in the State, gather information from such companies as to the amount of their capital length and geographical position of their canals, and such other valuable statistics as relate to the canals and region of the country in which they are located.—They were also to collect information as to the evils of which these companies complain in the effectual carrying out of their plans; and by instructions from the Convention, the Board was directed to draw up a memorial to be presented to Congress and the State Legislature, praying to have these evils removed, so far as they can be by legislation. A map was also to be prepared, showing the location and routes of all the companies in the State, and such information, legal and statistical, as could be gathered, that would be of service to those companies.

Has this Board ever made any report? The immense capital invested in mining water enterprises, would seem to call for some permanent organization of this nature, by means of which useful information may be collected, and a mutual interchange of views be disseminated with regard to this great and growing interest. If any of our readers can give us any information on this matter, we should be pleased to hear from them.

NO EARTHQUAKES IN THE SIERRAS.—The Placerville American says that the earthquake which was felt so severely at San Francisco and in some other portions of the State, does not seem to have affected in the slightest degree the great Sierra Nevada range—and that journal gives it as an opinion that this range of mountains has not for ages been subjected to a single vibratory motion from an earthquake. In support of this opinion the editor says:

"We know of one instance where an isolated rock, nine feet in height, almost a perfect sphere, egg-shaped, of many tons weight, is now standing upon one end, and upon a base of less than one foot in diameter, upon the smooth surface of another rock, that though the strength of two men is not sufficient to displace it, yet the slightest violent movement from side to side, would inevitably send it leaping and tumbling to the valley below.

"In the vicinity of Lake Valley, near the summit of the Sierras, is the 'steepie rock,' or petrified tree, as some believe it to be, standing perfectly perpendicular, nearly 80 feet in height, nine feet in diameter, and forming a dense section of a pine tree entirely and smoothly denuded of its limbs, and cut square at the top. A column of stone eight feet high, with a diameter of less than four feet at the bottom, would make but a short stand against an oscillatory movement if at all violent."

It was formerly supposed that California could not produce corn, but by some reports which we have recently been made it seems that in some portions of the State, it yields a very prolific crop. Particularly in the vicinity of Los Angeles, it has been found to succeed admirably, and the old idea that corn would not grow there has been entirely exploded.

It is in contemplation to construct a Railroad bridge across the Hudson river at Albany. Strong petitions for that purpose are pouring into the Legislature from the Western and Central portions of the State.

The income of the Queen of England is \$1,935,000 a year, and Prince Albert \$150,000.

The Mineral Wealth of Connecticut.

The discovery and working of the gold mines of California seems to have given a new and increased impetus to mining operations all over the Union. Thousands of returned Californians are turning their attention to the search for, and working of mines in the older States, and in many instances with very remarkable success. The newspapers of the East are also waking up to the importance of this great national interest, and are calling public attention to the mineral deposits in their respective neighborhoods. It will be our purpose to note such facts, as we, from time to time, meet in our exchanges, and shall be greatly obliged to any of our readers who may place before us any such information which may come under their observation, and which may yet escape our own researches. We are indebted to Dr. Tibbals, of this place, for a copy of the New Haven (Conn.) "Register," containing the following interesting information with regard to the mineral resources of Connecticut. The article originally appeared in the "Hartford Times," and will be read with interest by all.

"The mineral wealth of Connecticut is deservedly attracting the attention of capitalists in other States, as well as in our own. It may not be generally known, that small as our granite area is, the limited space between the explosions beneath the surface have been, we yet have in our small territory nearly one half of the well established mineral operations of the United States throughout the world. It will probably surprise many of our readers, who look upon the good old State as an area of farms, to know that there exists here a large number of the most useful minerals, iron, copper, tin, lead and zinc, but that we have also deposits of silver, bismuth, cobalt, nickel, and barites; as well as the rare minerals, titanium, tantalum, columbium, molybdenum, &c. In some places, diamonds, emeralds, and amethysts, have been found in other cases, coal and plumbago, while we have large deposits of earthy and alkaline salts, and fluxes.

But the deposits of iron and copper are probably destined to be the chief sources of wealth to the State. Some time since there was the impression, that our iron mines were tending to exhaustion; but more thorough geological researches, together with the extensive workings throughout the north-western section of the State, of this useful mineral, have established the fact that not one half of the workable beds in that rich district have been uncovered. With the modern improvements of the hot blast, and new systems of economical working, there is no doubt, but that these beds will continue to be worked for an indefinite period, and may well attract capital to the uncovering and piercing of new deposits, for they must ultimately become a source of wealth to the State.

The copper region of the State has not yet produced a tithe of the important results it is destined to. This is not from the absence of the metallic treasures, but from the want of energy, intelligence, and capital employed in their production. Within the past few years, this desideratum has been measurably supplied, and our copper deposits have been supplying the demand of national commerce, to a greater extent than is dreamed of by many in their immediate vicinity. The extensive workings in Bristol, where only two years since the workings have been expended, and about eighteen hundred tons given to the trade, and which are conducted with energy, intelligence, and scientific skill,—logically and naturally the workings of the old Newgate mines in Granby, on large yields and profitable results, indicate something of what we may expect from the mineral wealth of the State, if properly developed, by the disbursement of the necessary capital and skill.

A copper mine is now being opened at Torrington, with prospect of producing a large and a new company at Bristol have also very favorable prospects.

In addition to the copper mines in active operation, we have the cobalt and nickel mines at Chatham, with their rich and energetic working; and another of the sulphate of barites, at Cheshire, which is daily sending large quantities to market. The silver and lead mine at Middletown, is about to be opened under the auspices of a recently formed company in New York, and we hear of other project workings in different parts of the State.

There is little doubt but that the metallic resources of our State are well deserving the attention of capitalists, both at home and abroad, and we are confident that the attention of our solid and enterprising men of business is being directed to them. It will prove not only profitable to the inventor, but beneficial to the community at large, by giving a

new sphere of employment for laborers, while it increases the demand for mechanics and mechanical work.

In addition to the above enumerations by the "Register," marble was also at line, (the latter of a very superior quality, known as the "Canaan Line") are found in this State in exorbitant quantities. A company has been formed within the past year for the extensive working of soap stone at Torrington, on a newly discovered deposit of this material.

QUANT MINING IN GEORGIA.—The New York Mirror, speaking of mining operations in Georgia, says:

"We were shown, yesterday a solid bonanza of pure gold, taken from the Columbia mine, Ga., the result of three days' work.—The value of the lump is \$1,300. These mines are owned by a few enterprising gentlemen who are working them with great success. A company partly composed of the proprietors of the Columbia mine are about to open the Park mine, in the same neighborhood, which promises to yield an average of \$200 a ton of the precious metal. The proprietors of these mines count on an average product of about \$25,000 a month. This considering the moderate cost of working is a golden harvest—almost equal to the richest returns from the placers of El Dorado."

The Arctic Regions.

The recent return of Dr. Kane from the frozen regions of the north, and the now well authenticated fate of Sir John Franklin, and his brave associates, has served, if anything, to renew the desire for research in those forbidding regions. The facts and observations announced by Dr. Kane with regard to the "open sea" beyond the field of his explorations, meager and unsatisfactory as they are, have excited the most intense curiosity and interest among scientific men throughout the world. One of the facts was the fact of the existence of this sea, and the modified temperature of the atmosphere in its vicinity made known, that innumerable theories were started to account for the phenomenon. But theories merely can never satisfy Yankee ingenuity when there is any such thing as working a fact. It is an open sea at the north pole, some adventurous Yankee will find a way to work his ship into it, and will most assuredly pluck his ears and stripes upon the North Polar bear. There is anything there to fasten it to; and if he will run the keel of his ship directly over it, "Gloven hell," and then and there take possession of "the waste of water in the name of the 'United States of North America.'"

An expedition to accomplish this is already talked of. It will cost treasure, and probably half the human race will be sacrificed against the glory of the achievement.—Rash and barren of any practical utility, as the enterprise seems to be, men will be found who will attempt it, and there is no power who will never allow the glory of such an achievement to redound to the honor of any other flag.

It is well known that the circle of highest heat does not coincide with the equator as has until recently been generally supposed, but more nearly with the line of the tropics. From careful observations it has been ascertained that the mean annual heat directly under the equator, is not so great by several degrees, as it is in latitude 18 or 20 north or south. Then why may not the another circle of heat be found in the Arctic, and the centre of frigidity be found in the vicinity where Dr. Kane wintered, and finally left his ship—say from 75 to 80 degrees north or south? It is the inference deduced by scientific men.

Navigators have now reached 82 deg. 30 min. north, and 78 deg. and some gamblers upon the globe have reached the American and the latter by English. The north magnetic pole has been discovered and examined—it is situated on land elevated but a little above sea level, in 70 deg. 45 min. 48 sec. west longitude. The position of the south magnetic pole has also been discovered but not reached, for it is situated in the midst of lofty mountains, and is not constant. A great distance continues, and is called by the impetuous barriers of ice. It is in latitude 77, by longitude 167 west. In its immediate vicinity are two volcanoes 12000 feet high, in an active state.

The DECADE, CURRENT is about to be introduced into England. The pound will be retained as the unit, and divided into one thousand parts. The lowest name will be the furthering one thousand of which will make a pound.

STATUS OF CALIFORNIA.—Wm. B. Astor, of New York, has been elected. His own Power's estate of California, for \$10,000.

[From the Sacramento Daily Union.]

Important Discovery—A New Process for Saving Gold.

The following letter written to Dr. F. W. Hatch, of this city, has been kindly handed to us by him for publication. The signers are distinguished chemists and mineralogists, and natives of France. One of the gentlemen carries with him an experience of twenty years as a chemist, mineralogist and practical miner in Chili. Years have been spent by them in experiments to perfect the process by which they claim to be able to detect and save gold in large quantities where all the known modes of operating have failed to develop and save it. The results of their assays of tailings and black sand, as stated in their letter, are truly astonishing, and if even one quarter they claim can be accomplished by the aid of their newly discovered chemical process for saving gold, the discovery will prove the introduction of a new era in mining in this State. Gold is our great staple, and any scientific discovery or invention calculated to insure an increased product of gold dust, should interest every man in the State.

These gentlemen have spent weeks in Amador county, and so far as we can learn their experiments satisfied all those who took the pains to examine the results, of the reality as well as the great value of the discovery. We have seen specimens of the dust extracted from fine black sand, and from that more coarse, or what is termed "hydrate of iron." The process, of course, is only known to those gentlemen, who claim to be the discoverers. The chemicals are not costly, can be made by themselves, and, as before remarked, if future experiments, on a more extended field, exhibit results one quarter as great as those shown by the assays made on a limited scale, the road to wealth may be said to open before them. But in this accumulating wealth, as the reward of long scientific research, they must confer a lasting benefit not alone upon the miner, for the world will be included. It will cost comparatively but a trifle to put up the works necessary to test this process thoroughly, and we are glad to learn that the incipient steps have been taken in Amador to fully determine its value practically as a gold saving agent. The plan of operating, as we understand it, will be before the Company, which has been already formed, to put up works for assaying on an extended scale, these to be located in a proper position, and then assay tailings black sand, etc., as they may be brought in from the surrounding mills and mines—the Company to assay for a certain portion, or pay a given price for the sand or tailings to the owner.

Those wishing to inquire more particularly about this discovery may obtain information from Dr. Hatch, at his office on Second St. It is known that millions have been wasted in this State for lack of the necessary knowledge to enable the owners of quartz ledges and mills to save the gold after the rock was crushed. Hundreds of experiments have been made with amalgamating machines which proved failures, and, if models of all these machines could be gathered into one room, they would form a real cabinet of curiosities in the shape of inventions that are saved gold.

This new process, if we furnish the key to unlock that book of knowledge so essential to the highest success in mining. We hope a consummation so devoutly to be wished by quartz miners may certainly follow the more extended experiments yet to be made by these scientific and persevering gentlemen. Such an expenditure of intellect and labor merit success.

M. Chevalier and his partner are now in this city, and will visit San Francisco to purchase such machinery and materials as may be needed for the "works" to be erected in Amador.

Below we give the letter, which we think will be generally read:

SUTTER CREEK, Amador Co.,
Feb. 14, 1891.

DEAR SIR:—We left for a journey in the quartz mines of Amador County, and here is

our promised report of them. "Eni, vidi, vici," proudly wrote the great Roman, and we, too, having found the key to the long-quieted nature, we could write that we had vanquished also the prejudices of quartz operators in their injudicious proceedings.—Truth, no matter how kindly expressed, is always unpalatable to those whose want of knowledge is forcibly shown by its exposition, but as chemists and mineralogists, we promise you that the results in Amador are immediately rich, and, so far, but sparingly worked. In point of mineralization they are perfect, and promise to rival, if not to surpass in continuation, any mines of the same formation known in the world. Apart from the gold perceptible in the rock, the greatest amount of gold lays in the different superstrata of iron and copper, which they abundantly contain; as well as in the hydrates, carburets and oxides of iron. All these envelop the gold in its metallic but almost impalpable state, and nothing but a chemical and metallurgical process, of the kind we are about to compel them to abandon the gold to a good process of amalgamation, and hinder them from interfering with the re-union of the amalgamated atoms at the separation of the sands.

We visited, also, most of the quartz mills in the same localities, great facilities being offered to us by their different agents, for which they will please accept our thanks. We saw, everywhere, not powerful or extensive, but very good machinery, as far as they went, and for the purpose of the crushing of the rock, and our world known reputation, that department of mechanism was well sustained; but here our praises must end, inasmuch as we could not discover any knowledge of the treatment of the tailings of the different ores. The amalgamating process is very defective, and the means of separation from the gangues injudiciously applied.

The present state of the operations has been clearly demonstrated to us by a series of careful assays made on tailings from different mills brought to us by the owners, which assays were made publicly, and prove the correctness of what we stand responsible.

Mill No. 1.—Assay No. 1, quartz tailings, not concentrated, \$18 per ton.

Do. do. Assay No. 2, quartz tailings, not concentrated, \$14 per ton.

Mill No. 2.—Assay No. 3, tailings, not concentrated, \$54 per ton.

Do. do. Assay No. 4, tailings, concentrated, \$18 per ton.

Mill No. 3.—Assay No. 5, tailings, concentrated, \$720 per ton.

Mill No. 4.—Assay No. 6, tailings, concentrated, \$288 per ton.

Do. do. Assay No. 7, the same tailings after concentration, \$6 per ton.

Mill No. 5.—Assay No. 8, tailings, not concentrated, \$2888 per ton.

Assay of Black Sand, tailings from diggings worked with mercury.

Hydrate of iron, very fine, \$140 per ton.

Assay of the same, very coarse, \$2500 per ton.

Tailings not concentrated mean, as they run out from the mills; the concentrated are the sulphurets remaining after panning off the alloy, etc., which are in the average of from 3 to 40 lbs. to the ton.

These assays were discontinued only on account of scarcity of chemical agents; but single tests were made publicly, and our gentlemen, at different times, giving approximately about the like average.

Now the average yield of the crude quartz rock at present is about \$100 per ton, and \$20 per ton, which, compared with the yield of the tailings of the same, shows a loss of from one hundred to five hundred per cent. The present state of the operations is about as follows:—The quartz mining has fallen—here is the cause of the loss of all the immense capital engaged in it. Since 1851, quartz has been mined in every section of the State, where the beneficent hand of nature's God has placed it, to be strewn in the beds of the surrounding creeks, where it lays almost in its virgin state, and is secured, so to speak, remunerated the labor of the men who brought it to light.

The evil known to us we have worked unprofitably for years to remedy. To prove its existence earlier, and not to be able to cure it, would have done no work, but we feel happy and proud to say that it can be cured practically and cheaply. A company under our sole direction has been formed here, named the "Quartz and Tailings Mining Association," and several thousand dollars are already subscribed. In a few days we will be with you, and will be glad to attend personally to any further inquiries from interested persons or scientific societies.

In closing this letter, already very lengthy, we will strongly recommend to any and all persons, Companies and individuals, to the completion of solid tunnels in their works, or the sin of the fathers will surely be visited

on the next generation. We would also advise them, for their own interests, to employ as Superintendents only men scientifically and practically fitted for such responsible situations. It is a delicate subject to touch before present incumbents, but we are bent on truth, and it is more than apparent that much loss is due to bad arrangement, through want of knowledge. For heaven's sake, and, in kindness, gentlemen, learn your profession, and we will be glad to see you, and will be glad to do so by your grateful employers and shareholders.

Yours, very truly,

J. CHEVALIER,
W. DUSSEAU.

After the above was in type, the following letter, from a citizen of Sutter Creek, to the Jackson Sentinel, came under our notice. It is dated Feb. 7th, and we copy it as evidence of the views entertained by those who have witnessed the experiments described in the above communication. The writer of the letter to the Sentinel appears to have been fully satisfied of the success of the assays, from his "own observation." We make the following extract from said letter:

"It may be of service to the readers of your paper, to be informed of a very interesting visit to our town, of two chemists and mineralogists, Messrs. Chevalier and Dusseau. They have come here from San Francisco, to make public assays of our quartz tailings, black sand and talings, etc. The results of their experiments have been truly astonishing. They show plainly to the most incredulous, that we are losing from 50 to 75 per cent. of the gold from our quartz and other diggings. They profess to be able to save all that we throw away, and from my own observation I have no doubt of their abilities for success. Their assay of the tailings in the Sacramento and San Francisco papers. They have opened a subscription, and intend forming a company, to be called the Quartz Tailings Mining Association, of Sutter County, with a capital of \$20,000, in one hundred shares of \$200 each, the capital to be repaid to shareholders before they receive any benefit therefrom. This is a most important discovery, and if you will confer the favor of publishing these facts, it may help them in their undertaking. In exchange for the valuable statistical information, the freighting business throughout the central and northern portions of the State. The title by which the company is designated is a misnomer. It should read the 'Sacramento and Bencia Railroad Co.," for such it is, and must ever be. The placing of a line of boats on the route from Bencia to San Francisco, will never make a railroad of that portion of the route, and the name as it now stands will only create confusion.

The road will be 55 miles long, and the total estimated cost of construction, with its equipments complete for running is \$3,000,000—a fraction short of \$52,000 per mile. The estimated profit on this road over and above all expenses is 20 per cent. on the capital invested. This estimate is based upon the present business on the river, and on a reduction of over one half on the existing rates of passage fare and freight charges. The natural increase of business upon the route, by the advance of population, and the improved facilities for travel, will afford abundant margin for any under estimate in cost of construction or running. The road must not only prove a good paying investment—even at California rates—but will afford greatly improved and much needed facilities for travel and transportation between the seaboard and the interior.

The Report is accompanied with a map, giving the route of the road, as also that of the Sacramento Valley Railroad, which is now in operation twenty-two miles out from Sacramento. We are pleased to learn that the construction of this road is in the hands of gentlemen who are able and determined to put it through at an early day.

Notwithstanding the generally mountainous character of the state, nature has furnished us with a nearly perfect grade for a system of railroads by which we may penetrate into almost every portion of our territory. From Bencia to Sacramento, thence to Colusa, and along the foot-hills northwesterly to Slatska, a distance of about 250 miles, there is a natural grade for a road not exceeding three feet to the mile, with no difficult obstacles whatever to overcome. To this main trunk lateral branches could be run from every important point in the mountains, affording to each of those localities direct and speedy communication with Sacramento and San Francisco. The amount of freight money now paid monthly at the extreme northern point of this route is set down by the local paper there, the Shasta Republican, at \$70,000 monthly! This is for freight alone. This amount includes the freight that passes through that city to places beyond but does not include an immense amount of produce which is conveyed thither from various points along the Sacramento valley.—In addition to the freight business, no less than \$30,000 of freight is paid by passengers to the California Stage Co. In all, \$1,200,000 per year is paid in hard cash at the extreme end of the route! The road in reaching its upper terminus would have to pass through the entire length of the most populous portion of the State; every important point of which would abundantly sustain its own portion of the road. Can another route for a Railroad be found in the entire world presenting superior inducements to capitalists? This road being a continuation of the Sacramento Railroad 200 miles to Slatska, 221 of which is already completed, and in successful operation, can be built and equipped, for one third less per mile than the Sacramento and Bencia road, or a total cost of \$9,000,000. It has been estimated at \$6,000,000, which is evidently a rather loose calculation. However, replacing its cost at even \$10,000,000 there can be no doubt that it must prove a most profitable investment. Without any increase of trade or population whatever, but at the current rate of charges, the business of Shasta alone, with the road, would be dependent upon it, and the working expenses of the road, the loss of time by the increase of business, the mission would be immense. With all the figures and facts, who can entertain a doubt of the eventual completion of this work? The completion of the first 22 miles, and its successful operation, even for so short a distance will soon attract the attention of business men and capitalists to its early extensions.

SILVER IN CHILI.—The exportation of silver, in bars, from Caldera, during the year 1885, amounted to \$3,652,470. The exports from Copiapo during the same period, was \$3,635,480. The coinage during the year was \$2,196,371.

NATIVE COAL.—The Coast Range country does not contain all of the coal to be found in California soil. The editor of the Marysville Express has been shown a sample of the coal from the Feather river bed, about twenty-five miles from Marysville, which bears a strong resemblance to the English canal coal. It has been recently thoroughly tested, and is said to be in every way equal to it. The vein is so extensive that the company which has commenced working it confidently expects to be able to furnish all the upper country, including the Sacramento and San Francisco markets, at rates much lower than has been afforded.

COAST RANGE COAL CO.—The Argus says that this company has organized with a nominal capital of \$100,000, divided into one thousand shares, of \$100 each; and that the shares are sold for \$105—making the cash capital with all the shares sold \$105,000. The company expects to furnish coal enough to meet the entire California demand.

NEW DRILLING.—New, extensive and rich diggings have recently been discovered on the Quaternary River sixteen miles above Placerville. They are very deep, but prospect well.

Mining Summary—Quartz.

The day of doubt, with regard to the success of quartz mining, as a permanent business has now passed away. From every part of the State we hear the most gratifying results from quartz operations, and it is now an established fact among intelligent persons engaged in the business, that it is not excelled in profit by any branch of industry in the State.

According to the message of Gov. Bigler, submitted to the Legislature, January 1855, there were at that time 32 quartz mills in active operation in the State; according to his message submitted just one year after, that number had increased to 59. At the present time, three months later, there are at least 70 mills in active and successful operation, which by the first of January next will in all probability be increased to at least 80. This enumeration does not include those mills which have proved failures, or which are lying idle from other causes. The aggregate yield of these mills, the present year, will not be less than \$5,000,000—or nearly one eighth of the entire shipment of treasure from the State!

Such is the present condition of the quartz mining interest, and still it is only as yet in its infancy. What will it be when it arrives at maturity? What results may we not anticipate from it in ten, or even five years hence! Out of some sixty mills now in operation, there is scarcely one that does not yield a handsome return from the investment while many, if not most of that number, are yielding extravagant results.

In Amador County, it is said there has not been a single failure in this branch of mining. In Calaveras County, according to the Chronicle, the mills are paying well. One company, Messrs. Matron, Smith & Heath, who use nothing but the arrastra for crushing, have taken out as high as 13½ lbs. of gold on one cleansing up. New prospecting companies are being constantly formed in that vicinity for opening new leads. One mill at Rich Gulf recently took out twelve pounds of gold from one day's crushing.

In the quartz mills are equally profitable. The Quartz Mill, on Grizzly, has a yield of working time, the past year, of \$13,000—\$422.33 per day. The millers generally in that vicinity are doing remarkably well. A new mill is now in progress of erection at the head of String Canon.

Several very rich veins have recently been opened in the vicinity of Georgetown.

In this vicinity the mills were never doing better than now; and confidence in the permanency and profit of the business is daily gaining ground.

Our exchanges from every direction contain reports of new discoveries and the erection of new mills. Several new mills are now in progress of erection, or have recently been completed in this vicinity, which are also being noticed. We shall hereafter endeavor to be more particular in collecting and arranging facts, so that we may present, with each monthly issue, a well digested report of the progress of quartz operations throughout the State.

Attracted by the present brilliant prospects of the business, there is now a very general inquiry among capitalists for opportunities to invest. Many who lost money in its infancy, from causes which no longer exist, are now becoming satisfied that it is a profitable branch of industry, and are awaiting opportunities to invest interest. Many veins which would not pay expenses, at the time when labor was high, will now, at the present rate of wages, yield handsome profits. Experience has taught us that the ideas which formerly obtained of the necessity for expensive and elaborate machinery was entirely erroneous. A few years since two and three times the amount of machinery was put up on a vein that was required. The consequence was the unnecessary investment of a vast amount of dead capital. It is possible, to our knowledge, to put up at the present time very efficient machinery upon a vein of ordinary

capacity, for from six to ten thousand dollars. It is not necessary, neither is it prudent to expend largely at the start. Be satisfied with a small beginning, and with economy and judgment the adventurer will soon business to any desirable extent. The days of wild and reckless speculations have passed away, we trust, forever. The gorgeous allusions of '51-2, have become dissipated by the stern realities of subsequent experience, and we are now moving along at a healthy pace, slowly, but surely and with caution. Long after the placer diggings are exhausted, and the golden sands of our rivers sifted of their precious deposits, and the long toms and sluice cast aside for the want of ground whereupon to work them, our mines of auriferous quartz will continue to yield their annual millions of treasure, and afford employment to population quite sufficient to keep up the reputation of our State as the greatest gold bearing country in the world.

Placer Mining.

The season thus far has been peculiarly unfavorable for mining operations. The early fall rains were much later than usual, and they were immediately followed by a period of extreme cold weather, so that little water fell was rapidly congealed, choking up the ditches and rendering them almost entirely useless for some two months or more. The constant thawing and freezing of the earth, alternating between day and night, caused an immense amount of evaporation, so much so as to be sensibly perceived in all the rivers throughout the upper portion of the State. The rains immediately subsequent were very slight, and during the month of February and thus far in March we have had an almost continuous drought.

Many have looked with much confidence to the occurrence of the vernal equinox, as the period when our desire for rain was to be gratified. But at the present writing, this interesting incident has already passed some six days, and the bright sky above and balmy air around betoken anything but rain. The temperature during the day of the equinox was the highest experienced since the coming of the year. Still, notwithstanding the present unfavorable appearances, we are not even now without hope. The record of last year shows a succession of fourteen clear days next preceding the 29th of March, and yet we had rain on the last three days of that month, and also nearly 4½ inches in April following. A continuance of the present dry weather for a short time longer must work incalculable damage to all classes of the community.

THE MINES NOT DEPRECIATED.

Notwithstanding the unfavorable circumstances above enumerated, it seems to be the general impression in all parts of the state, and the conclusion is also warranted by the shipments of treasure, that the mines will yield fully as much the present year as they did the past, or any previous one. True our shipments are somewhat smaller than formerly, but we are accumulating more capital at home. There is now less money from abroad seeking employment here, than formerly, and our citizens are consequently thrown more into their own resources for home improvements. It is to this cause, rather than to a falling off in the yield of the mines that we are to attribute the decrease in the shipments of treasure.

LACK OF EMPLOYMENT.

There now is, and for some two years past has been much complaint among a large class of our population about a lack of employment; and this, among uninformed persons, has generally been attributed to a giving out of the mines. Nothing could be further from the truth than the conclusion thus drawn. By the recent improvements which have been introduced into mining operations, a large amount of manual labor has been dispensed with. Four or five men will now do more work with a hydraulic hose than fifty men could do formerly with the appliances then in vogue. A lack of water has always been a great drawback to mining operations every-

where out of the rivers, and yet with the present appliances one man will require as much water as would formerly suffice for six or eight. These facts will readily account for the decreased demand for labor, without at all looking to any appreciable diminution in either the extent or yield of the mines.

MINERS CONTENTED.

As a general thing there appears to be a much better feeling among miners than formerly. They are more contented, possess less of a propensity to rove, have more confidence in the permanence of the business, and, as a consequence, are constructing good and comfortable dwellings, and providing themselves with more of the comforts and luxuries of life. The business has been reduced to a system, and is now governed by the same rules and regulations which direct and systematize other departments of manual labor. Many are surrounded with their families, and possess most of the little home comforts and associations, which make happy the laborer's heart, lighten his daily toils, and give energy and efficiency to all his efforts.

MINING REQUIRES CAPITAL.

Mining now, to be successfully prosecuted, requires experience and capital, and it is perfectly for a man without either to think of succeeding in the business. Men of experience are also employed in preference to green hands, so that at the present time, and during the existing scarcity of water, little encouragement can be held out for inexperienced hands to come to the mines. Better seek employment upon ranches or at some mechanical pursuit, even at the lowest wages.

"RICH STRIKES."

Just as good claims are now being opened as have ever been since the first discovery of gold at Sutter's Mill. We might easily fill our columns with notices of "big strikes," "new diggings," and the actual results of mining operations in every part of the States. Our interior exchanges from all directions, are full of them. We seldom chronicle them, for reasons which are apparent to every practical, well informed miner. We append, however, a few general remarks based upon reports from the local papers which go to show that the mines in reality were never more productive than at the present time.

MINING IN THIS VICINITY.

To commence with our own neighborhood, we have an abundant evidence, on every side that, were it not for the present scarcity of water, the yield of the mines would come fully up to the most favorable periods of the past. Recent explorations and discoveries prove most conclusively that the mines in this County have as yet yielded scarce a tithe of what we may reasonably expect to realize from them in the future. Vast places which may be counted by miles square, hitherto untouched, are known to contain rich deposits, and only await the coming of water and the application of capital to make them highly productive.

MINING AT THE NORTH.

Far up the Sacramento valley, from 150 to 250 miles above Sacramento city, are being developed rich and extensive placers, upon and around which are growing up thrifty and populous communities, the rapid increase of which attests the most abundant evidence of richness and extent. The local papers published in that vicinity chronicle frequent cases of "rich strikes" and "new discoveries" and laugh at the idea of the mines giving out. True, the miners in that vicinity, as elsewhere, complain of the drought and lack of water facilities, but we notice several new and extensive ditch enterprises now in progress and just about being completed, which will afford facilities for opening much new ground and give employment to many hundreds of new idle hands. At the very head of the Sacramento valley, nestled down in a bright little valley among the foot hills, is situated the town of Shasta, which from its peculiar position is destined to become a place of great importance. Even now, there is no town in the State in proportion to its population where more business is done than there.

MINING IN EL DORADO AND PLACER COUNTIES.

No better evidence of the stability of the mines need be sought after than that presented by the extensive mining operations going on in these counties. In Coloma, where the first piece of gold was picked up, the mines were never yielding more abundantly than now. In Placerville, the American, published at that place, says—"We have never known a time when the product of our gold mines and placers was poured in upon us more steadily abundant than the present." The same paper also makes the following truthful remarks:—"People have found that the California gold region is a tremendous battery, containing a thousand blanks for one prize! They have found, too, that the newspapers have made it their business to puff all the pliers, but have said never a word about the blanks." The claims in the neighborhood of Michigan Bluff, are yielding remarkably well.

MINING AT THE SOUTH.

The news from the South is similar to that from every other part in the mines. A large amount of gold is being taken out wherever water can be obtained, but the water itself is the chief agent in the production of the gold. The hydraulic hose is throwing multitudes of miners out of employment, while at the same time it is greatly increasing the aggregate yield of the mines.

The Sonora Herald, speaking of localities, which are abundantly supplied with water from ditches, says—"We hear the most flattering account of the success of the miners. At Moatesuma, Turner's Ranch, Robinson's, Shaw's Flat, Columbia, Springfield, and in the immediate vicinity of this town, all are actively engaged, and are doing well." Miners engaged in the "Table Mountain" operations, says the Herald, "are prosecuting their works with energy. On Turner's Flat the miners are busily engaged, and new discoveries are constantly being made. On Saturday last, one company, while at work picking up the dirt over four pounds of gold; and another company of three men washed out over twelve ounces. From all directions we hear of good success attending the labors of miners, and we have no reason to doubt but that the business of mining will continue to be as good for years to come as it has been for years past.

Strangers cannot expect to come into the mines and make their fortunes immediately. It requires labor and perseverance to obtain gold in these times, and with these a person is certain to obtain a fair reward for his labors."

KERN RIVER.

The latest intelligence from Kern River is highly favorable, and there can be little doubt but what that locality will eventually prove a rich and valuable mining district. The San Jose Telegraph, of a late date, speaking of these mines, says—"It appears that many persons in that neighborhood have kept up a correspondence with friends who have remained at those mines, through good report and through evil report. The Telegraph professes to feel convinced that the Kern River mines will be considered in a short time as among the richest in the State. The quartz is exceedingly rich, and easily crushed, and its informant states that \$10 per day is the average yield to the hand.

WAYNE ROUTE TO SALT LAKE CITY.—Recent explorations have rendered it extremely probable that water communication by means of light draft steamers, may be had to within seventy or eight miles of Salt Lake City.—This route is from the Gulf of California, up the Colorado and one of its branches, the Rio Verde, the upper branches of which approach, as is supposed, with navigable water, within the above mentioned distance of Salt Lake City. Explorations are now being made by the Mormons to test the practicability of this route. Should a communication of this kind be opened up it will prove of vast benefit to Salt Lake City, and the trade of Utah Territory would soon be transferred from St. Louis to the Pacific Coast, while the trade itself would vastly increase. The economic, social and political consequences of the opening up of such a channel of trade would be highly important to the whole country.

Railroads in the United States—The Pacific Railroad.

Within twenty years twenty thousand miles of railroad has been constructed within the limits of the United States, and each year is adding from two to three thousand miles to this grand total! The cost of these roads will not vary much from six hundred millions of dollars.

At the present moment New York city is connected with the capital of the State of Iowa by an unbroken line of Railroad, and the work is already progressing to extend this road westward to Council Bluffs, a distance of about two hundred miles farther. This work will be speedily completed, and we shall then have a direct, unbroken railroad communication from Augusta, the capital of the State of Maine, to Council Bluffs, on the Missouri, a distance of nearly 1700 miles, and about half the distance from the Atlantic to the Pacific, over the Central Pacific Railroad route! This is the iron track slowly but surely progressing westward. While politicians are planning and making speeches, the people are acting and making cars! And bye and bye, perhaps before the demagogues at Washington have ceased their angry sectional quarrels, as to what route the road shall take and how it shall be built, the iron horse will have followed upon the wake of civilization in its westward travel, until it shall awake its echoes amid the distant gorges of the Rocky Mountains, and perhaps come our own Sierras!

This is no fancy sketch. A glance at the map will satisfy the most casual observer that the line of this road, from New York to Council Bluffs, must be the one over which will pass the future overland traffic between San Francisco and New York.

From New York city to Council Bluffs is a distance of 1500 miles. The difference of latitude between the two points is only about forty miles, and nowhere in the whole distance of 1500 miles from the extreme point does the road deviate over sixty-five or seventy miles from a direct line. From Council Bluffs to the South Sea, which is about one half the distance from New York to the Bluffs, the line will be equally direct, there being only about one hundred miles difference in latitude between those two places.

The tide of emigration is already pouring into the Platte Valley, and ere many months shall elapse, Nebraska will be ranked among the States of the Union, with her western borders close upon the South Pass, and the fertilizing waters of the Platte winding their sluggish way through the entire length of the State from west to east. As civilization is no where without the iron rail, the people of this new State, who will be concentrated along the valley of that river, will meet the State of Iowa at Council Bluffs, and in her own sovereign State capacity will continue the track westward along the valley of the Platte, some 500 miles to her western border, at or near the South Pass. Thus far the road will pay its way and become valuable property for busy business alone as fast as it can be built.

The iron horse will build the road and have the cars running to the summit of the Rocky Mountains in less than TEN YEARS! And thus, while politicians are talking to less than no purpose at all, the people, by working, will quietly and practically solve the problem as to which is the most practicable route.

Is there a man—an American—who doubts that the energy which in less than fifteen years has pushed forward this great work from New York 1200 miles westward, will fall to add 800 miles farther to its length in 10 years more? If there is, that man is not up to the times, and should emigrate to some slower country. Gen. Dix, President of the Company which is now organized for constructing the road through the State of Iowa to Council Bluffs, in a speech at the completion of the same to Iowa City, on the 3d of January, expressed himself decidedly of the opinion that the first finished railroad to the Pacific ocean will pass through Iowa to Council Bluffs—

This is the only feasible central route. He examines the natural advantages of this route from New York city westward along the line already constructed, and concludes that it affords the greatest facility for cheap and expeditious transportation by railroad as well as the most bountiful country naturally for sustaining the works which traverse it. Of the country west of the State line of Iowa, he says for the first thirty miles in Nebraska, it is easily crossed by a railroad, and capable of producing abundantly; and all the examinations show that the valley of the Platte river for hundreds of miles, almost to the base of the Rocky Mountains, is highly favorable for a continuation of the road.

Gen. Dix says "what the country needs is an uninterrupted communication by railroad between the two great commercial depots of the two oceans. These are the cities of New York and San Francisco; they have been fixed by nature—by the laws of physical geography; and no arrangement or contrivances of men can change them." He puts down the chief advantages of this, which he calls the central route, as:

1st. It is completed from New York to Iowa City, fifty-five miles west of the Mississippi, more than twelve hundred miles from the Atlantic ocean.

2d. It strikes the Mississippi at a point central to the population and nearly so to the territorial area of the Union;

3d. It traverses the state of Missouri, a country of extraordinary productive power;

4th. The formation of the country east of the Mississippi, I may say east of the Rocky Mountains, is peculiarly adapted, from the nature of the country, to the use of railroads, to rapid and economical transportation; and

5th. The populousness and wealth of the district already traversed, not only furnish the means of sustaining the railroad, but have been completed, but of contributing very largely to the continuance of the line further west.

We agree with the San Francisco Chronicle which says of the remarks of Gen. Dix, "There is the argument, and it is unanswerable."

THE STOCKTON AND SAN FRANCISCO RAILROAD.—The citizens of Stockton and others interested in this enterprise have been quietly yet steadily at work for some time past in collecting the necessary statistical information, and in otherwise maturing their plans for a speedy commencement of this, one of the most important undertakings projected in the State. The connecting the valleys of the San Joaquin and Sacramento with San Francisco. The surveys have been completed, and the maps and profile cover six feet of paper in length, showing the perfect practicability of the route. Mr. O. Byrne and Ex-Gov. Burnett leave on the steamer of Thursday for Europe, whither they go for the purpose of procuring the necessary capital for building the road. The documents and statistics which they take with them, and their well known personal qualifications for such a negotiation, preclude all fears of any want of success in their mission.

Steps are also being taken for the construction of a railroad from the San Francisco terminus of the connecting route, which is said of Contra Costa, to the point which is said to be a perfectly practicable route. The distance we believe is about 33 miles. The distance from the same point to Stockton is 67 miles.

WAGON ROADS.—Mr. Day has introduced in the Senate, an act for the survey and construction of wagon roads across the Sierra Nevada, which has for its object the improvement of six different roads through the Sierra Nevada, and appropriates the total sum of \$240,000 to complete the same, to be paid in bonds, payable in ten years; the above law is to be submitted to the people at the next election for their approval.

FEATHER RIVERS COAL.—The editor of the Marysville Express has been trying some of the coal from the coal bed on the Feather River, and after testing its qualities says: We have no hesitation in saying that we consider it equal to any coal that we have ever used. It is precisely the same as the English canal coal, and will be produced in quantities and at a price which must bring it into general use. Our friends C. & W., will please accept our thanks for the sack sent us, and the public may be assured that this coal bed is destined to meet the future demand for fuel. The work of taking it out is rapidly pushing forward, and we expect that this coal bed will prove a mine of wealth to its fortunate proprietors.

SINGULAR ASTRONOMICAL FACTS.—During the present year astronomers are on the alert to decide an important question that has lately arisen with respect to the rings of Saturn. The supposition which formerly obtained that these rings are composed of solid material of similar density to the body of the planet, is gradually giving way to a new theory that they consist of a mere gaseous substance, perhaps invisible on the surface of the planet from their extreme rarefaction, but visible to residents on other planets from the reflected rays of the sun. By some these rings have been compared to our "Zodiacal light," the nature of which is unknown, but which, by many, is supposed to form a "ring" round the earth like the rings of Saturn, and to have that appearance to residents on other planets. If this theory is correct, the changes above referred to with regard to Saturn's rings may be readily supposed to take place, and that without any serious detriment to the planet itself, or its inhabitants, if any it has. The belts of Jupiter may be of a similar character to the "rings," but less dense.

Another very interesting astronomical discovery has also been recently made, going to prove that the distance between the earth and sun is increasing annually, and some go so far as to argue therefrom that the increasing humidity of our summers, and loss of fertility of the earth—are to be attributed solely to this circumstance. The existence of the immense remains and huge proportions of ancient vegetable deposits attest to the decreasing fertility of the earth; and the finding of extensive tropical deposits in high latitudes give evidence of a great decrease in the temperature of the atmosphere. Little credit has hitherto been given to the traditions handed down from the ancient Egyptians and Chinese, that the sun's disc was formerly almost four times as large as it now appears. (It seems however, by careful observations made by modern astronomers, there is good reason to believe that the ancients were correct in their estimate of the size of the sun's disc. According to recent observations, it is calculated that in six thousand years from the present time, the distance of the sun will be so great that we shall receive from it only about one-eighth part of the warmth we now enjoy, and that the earth will then be covered with eternal snow and ice, in the same manner as the plains of the extreme north are now. Astronomers of the present day are making, if possible, more rapid strides in their favorite science than ever before.)

ANOTHER GULF STREAM.—Among the results of the observations made by the Japan expedition, is the discovery of a new "Ocean River," a perfect counterpart of our own famous "Gulf Stream." This stream is found to flow to the northward and eastward along the eastern coast of Asia, carrying with it a warm current, both of air and water. It is produced like the counterpart on the eastern shore of our own continent, by the great equatorial current, and in many places, especially along the coast of Formosa, its strength and character are fully as strongly marked, as are those of the Gulf Stream on the coast of Florida. In the Gulf of Yeddo its velocity is from thirty to forty miles per day. The mild climate of California and Oregon, is thought to be attributable to the influence of this stream, as is known to be the case with regard to the effect of the Gulf Stream on the coast of Great Britain. Lieut. Benoit of the U. S. Navy read a carefully prepared paper on this subject before a recent meeting of the N. Y. Geographical and Historical Society, from which the above facts are gathered.

A piece of quartz rock about the size of a man's head, and containing about \$1,400 in gold, was shown to the editor of the Shasta Republican, a few days since. It was picked up from a pile of tailings, which had been thrown out by a party of miners.

GRANT SPEED.—At the recent exhibition in Paris, a locomotive weighing fifty tons was produced, with ten feet driving wheels, and said to be capable of attaining a speed of one hundred and fifty miles an hour!

Water Ditches.

The value of water ditches is becoming every season more and more apparent. By far the most extensive and valuable placers in the State, are now known to be far above the level of our present water courses, in the immense deposits of ancient rivers and lakes. These deposits can be reached only by artificial means, and although some six or eight millions are already invested in such enterprises within the State, still every day serves more and more to convince us that we are but yet upon the threshold of this department of California enterprise. The ditch facilities of the State must be doubled if not quadrupled within a very few years.

The results of gold dust from various parts of the State, show a vast preponderance both in uniformity and extent, in favor of those localities which are most bountifully supplied with this indispensable agent of successful mining operations. The lack of judgment and experience manifested in many of the early ditch operations, served at first to engender a suspicion of doubt as to the general productiveness of such investments. Farther and late experience, however, has served pretty effectively to dispel such doubts, and now we believe that water ditch stock pays as handsomely on the average as any other property in the State. Not only capitalists from below, but miners also are seeking to invest in this species of property. Thus labor and capital go hand in hand; the experience and confidence of the miners on the spot, being a sure guarantee to the capitalist at a distance, that the operation in which he proposes to engage is safe and reliable.

NEW WATER PROJECT.—The Volcano correspondent of the Mountain Democrat says that a company has just commenced operations for the purpose of bringing the waters of the Moquelumne into the mining precincts of Clinton, Irish Town and Jackson, the work to be completed within one year. One year is a short time for the completion of a work of such magnitude, but the Mountain Democrat are enterprising and energetic, and will prosecute the work with all the vigor of which they are now working and are men, and intend to put our California claim find room.

GEOLOGY.—Dr. Trask, the State Geologist, has submitted his annual report to the Legislature. This State paper is one of great interest, not only on account of the subject itself, but in consequence of containing geological descriptions of portions of the State hitherto undescribed. It has been ordered to be printed, and when it appears we shall refer to the subject again. The document will comprise about 100 8 mo. pages.

LARGE FLOOD.—The Consolidated Ditch Company, composed of Messrs. Dill, Knox, Whartney and others, has completed recently the most extensive flume perhaps in this country. It is nearly three thousand feet long, extending from Oregon Hill to the diggings of Mr. Amos T. Laird, on Lost Hill. The greatest height of flume is about one hundred feet, at which elevation the waters head of the Red Creek and Sugar Mountain Ditches are conducted over to the valuable mining ground about Cayoteville. Two other ditches in the Red Creek are also brought over at different elevations of the same structure. The aggregate capacity of these ditches we learn is at least one thousand inches.—Nevada Democrat.

THE proposed railroad from San Francisco to Stockton crosses the Coast Range of mountains in the immediate vicinity of the newly discovered coal beds in that neighborhood. Should this coal field prove as extensive as anticipated, the coal interest will, in a few years, become one of the most important in the State.

TOLUCA PLANTATION.—A gentleman in Alameda County has planted ten acres of tobacco the present year. The seed is of the best Cuban varieties, and the proprietor expects to realize a handsome profit from the operation. His calculations are based upon experiments made on the spot during the two or three past seasons.

Quartz Mining.

New Quartz Mills.

The Pioneer Quartz Mill Company started their new mill on Wednesday last. This Company is located on what is known as the Pennsylvania Lead, in Humboldt Canyon, Placer County. It is owned by Grass Valley capitalists, and is one of the heaviest quartz mining operations in the State. The mill contains 24 stamps of 1200 lbs. each, which are driven by a sixty horse power engine. The Company erected a small prospecting mill on their vein about a year since with which they have crushed about one thousand tons of rock which have averaged a yield of \$19 per ton. The vein is very favorably located for working, so much so that even with steam power the rock can be quarried and crushed for about \$7 per ton. We are promised an early report of the working of this mill.

Asbestos.—We learn that the mill lately erected by some of our Grass Valley citizens on the famous National Lead, some thirty miles above this place, on the Yuba, was expected to have gone into operation the past week. This mill is propelled by water power, and has been fitted up with five heavy stamps, with the intention of increasing its capacity for crushing should circumstances warrant, so soon as the vein is as thoroughly proved by the machinery now in operation.

The National vein is one of the heaviest in the State—and is considered of great value. We shall look anxiously for the results of this mill. Its proprietors, and all who are acquainted with the vein predict the most flattering results.

ANOTHER STILL. The Placerville American says that Kirk, Johnson & Co., are now grading a wagon road along the side of their newly opened and working. A gold bearing quartz between Coloma street and Bedford Avenue, on the north side of the Creek in this city.

The continuation of the one on which the Company's mill, one being in operation, is now operating on quartz mining already in progress, is soon to be greatly augmented in the vicinity so as to conduce largely to the welfare of the city, can no longer be doubted. The extent of the rock deposits, the capital invested in the different mills, the number of hands employed in the various departments, would alone add largely to the probabilities of such a result.

The same paper further states, through a correspondent writing from Grizzly Flat, that the quartz excitement there is tolerably high at present; several new veins are being opened, which are very promising. A new quartz mill is to be immediately erected. The proprietors have contracted with Mr. Wilcox to build it, and there is no doubt it will be a first rate piece of work throughout, as Mr. Wilcox is an experienced and skillful workman at such machinery. Our quartz mills are paying well.

MORE RICH QUARTZ.—The proprietors of the Allison Ranch Quartz Lead have just had another lot of rock crushed at the Gold Hill mill, which gave fully as remarkable a yield as the first lot. In the present instance a little over 10 tons of rock was crushed, which yielded \$7,000—about 400 to the ton. This is certainly a most extraordinary yield, and may well encourage the proprietors in making speedy arrangements for an extensive working of the vein. Their machinery will be upon the ground in the course of a few days, and the mill will be in operation at the earliest practicable day.

OPENING OF ANOTHER QUARTZ LEAD.—The Nevada Journal says:—Some time in 1851, a quartz lead was discovered in Downville which seemed to be exceedingly rich. Gold specimens innumerable were broken out from the top of the lead where it cropped out. The lead was claimed at the time, and was covered up with earth to hide it from the curious, since which time it has remained undisturbed.

turbed until last week, when the work of opening it was commenced in good earnest. A company has been formed including the original discoverers, and it is altogether probable that within the present year a quartz mill will be put in operation there.

PROFITABLE QUARTZ MINING.—The Sacramento Union of a recent date relates the following case of profitable quartz mining: At the banking house of D. O. Mills & Co., in this city, may be seen some twenty or more golden bars, valued at \$30,000. The claims which yielded this enormous sum, are in Dry-lower, Amador county, and the entire amount was the product of twenty-eight days' labor of the Pototzi Quartz Mining Company, which consists of but four persons only—Messrs. A. C. & M. A. Hinkson, G. A. Miller and M. W. Glover.

New Amalgamator.

We were called upon a few days since to examine a new Amalgamator which has been in operation for the past few days at the Helvetia & Lafayette Company's Mill. The apparatus is exceedingly simple and cheap, and requires no attention whatever, except in cleaning up, which is a very speedy process. Messrs. Conway & Delavan, are affording the inventor, Mr. A. M. Stetson, every facility for a thorough test of his machine, which he calls the "Self-operating Amalgamator." The principle is equally applicable to placer diggings as to quartz. The trial thus far has proved highly satisfactory. It is placed outside of all other amalgamating apparatus, where the tailings are suffered to fall upon the ground and pass away from the mill. The construction of the machine is such as to be susceptible of multiplication to an indefinite extent, and requires but a moderate fuel. So fine is the gold saved by this machine, that it only yields a fraction over \$5 to the ounce of amalgam, the most of which would float away on the water.

REDUCTION OF ACETIC ACID QUARTZ.—The following from the London Mining Journal, will be interesting to many of our readers.

"We have had an opportunity, during the week, of visiting the laboratory of the Royal Panopticon of Science and Art, to witness some experiments by Mr. Harris, of Dolgelly, assisted by Mr. Ansell, the general chemist of the institution, for the economical extraction of gold from its matrix. The process is, we believe, a modification of an old process, and has been improved by the experience and important chemical discoveries of modern times. The ore is from the Chancelorsville Mine in Virginia, a quartz deeply covered with the red oxide of iron; this is first calcined, and reduced to an impalpable powder, which is then placed in a glass relict, immersed in a cistern of water, kept at a low temperature; this is saturated by glass tubes, with a generator, in which chlorine of gas is produced by the decomposition of the black oxide of manganese, acted upon by hydrochloric acid. This gas passes through, and thoroughly saturating every particle of the gold dust, into soluble chloride, converts the same into a soluble chloride of gold. This is then washed, the chloride consequently of iron is dissolved, leaving the inside of the tube like a web. The process is expected to be very economical on a large scale."

QUARTZ MINING IN AMADOR COUNTY.—There has not been a failure in the county in this branch of mining, but on the contrary all have made money, and the Sentinel contends that the quartz mills will employ more capital and workmen than the woolen factories of any northern State in the Union, a fact that will readily be perceived, and she is destined to be the wealthiest and most popular, as well as populous, in this golden State. Capitalists cannot afford to neglect in no other enterprise than quartz mining in Amador county.

Among the late notable discoveries is one reported of a process for transforming plaster of Paris into a pure white or of whatever grain—and scarcely varying from real marble in weight, while it is impervious to wet and cold, and is susceptible of the highest polish.

Remarkable Indian Tradition.

The following remarkable Indian tradition will be read with considerable interest in connection with the accounts of the late earthquake at San Francisco. It was originally published, we believe, in the "Alta California," some six years ago, and appeared with the assurance that the facts embodied were derived from a perfectly reliable source. Among the old men of the Indian Tribes who until recently lived in the vicinity of San Francisco Bay, were preserved legendary tales of their forefathers' achievements, and still the facts embodied in the sketch below lie in recollection. It is said of these Indians, that there are those who have welcomed their parents' return from hostile excursions into the country lying near Mount St. Helens, by a route along the coast, passing over a country since submerged, and where the opening of the Bay of San Francisco now lies. "The Indians of the Coast," and at the same time keep in mind the severe "whaling" which occurred in that vicinity some thirty or thirty weeks since, and the reader will derive new light concerning the geographical structure of California and the changes she may have undergone within a very brief period of time.

The Lake of California. An Indian Tradition.

The aborigines of California, like those of every other portion of America, have long been fading away before the progressive march of civilization, or mixing with the Spaniards who conquered them two centuries ago, have lost their identity as aborigines. Like their brethren elsewhere, they are leaving their ancient hunting grounds, the homes and sepulchres of their fathers, and wandering in their hazy knowledge, while the white man, as by right divine, takes and calls their lands his own. But still they have their legends and their traditions, and even now they gather around their broken council fire, and tell, as they tell, the fathers to their sons, the tales of former times, which their forefathers had told them. Among the traditions current among them is the following, which is certainly full of interest. They relate that where the Bay of San Francisco now is, was formerly a great lake, longer and broader and deeper than the Bay. According to their accounts, this Lake was more than three hundred miles in length, with no outlet to the ocean except in the rainy season, when the overflow of its banks and a small stream would flow to the ocean some thirty miles south of the present outlet to the Bay.

The ridge of hills along the coast was then unbroken, and served as a dyke to prevent the waters of the lake from escaping to the ocean. The level of the lake was many feet above that of the ocean, and its waters extended far up the coast, and into the Sacramento valley, and southward covering the valley of the San Joaquin.

On the banks of this lake, centuries ago, populous tribes of Indians dwelt, whose lances lined its shores. Indeed, if credence is to be given to the tales of Indians, the population of California will never equal those ancient days, when the red men fished the fresh waters of the lake, and hunted their deer undisturbed through the forests.

The hills along the coast are formed of soft sand and mud, and hence the tradition relates, the water began to make a breach, which yearly grew wider, until it burst through and among the hills with tremendous force, and the Indians were compelled to mark its way. And what was once a lake several hundred miles in length, is now a bay not forty miles long. This may have been the cause of the great earthquake, but it would seem far more reasonable to attribute it to some volcanic commotion which in those days might have been as prevalent there as it is now.

How far this tradition can be corroborated, must be determined by those who have the means. But so one who has witnessed the deep blue waters of the bay, and has passed the singular entrance of the Bay, called the Golden Gate, with its perpendicular cliffs, or has seen the no less singular bluffs of Baccos Bay, and some few fathoms in Frisco, can for a moment doubt that they were formed by some powerful agency, either fire or water.

On the hills and sand San Francisco fresh water fishes are found, and the small island of Yerba Buena, which lies directly opposite the town, rising out of the Bay at least one hundred fathoms, is covered with shells, which feels go far to prove the truth of that tradition, which has no doubt been handed down from former generations as matters of no less importance than the Indian tradition that the deluge is in sacred history. This event may have taken place a thousand years or even twenty centuries

ago, as the tradition affords no data as to when it occurred. It is a subject well worthy of study, and which may throw some light as to the origin of the coast of America, and the manner of its distribution over so large a tract of country.

The Suez Canal.

Prominent among the great enterprises of the age should be mentioned the "Suez Canal." The plans and preliminary surveys of this great work are now complete, and the Viceroy of Egypt has adopted the mode of construction feasible by his engineers. The canal is to traverse the Isthmus in a straight line, nearly north and south from the Mediterranean to the Red Sea, and will be 320 miles in length. Its breadth is to be 320 feet, with a depth of 30 feet, and is intended to float ships of the largest class. It is indeed a most gigantic enterprise and well calculated to form one of the features of the age. Besides the main canal, there will also be a branch connecting with the Nile, to serve both as a canal, and an aqueduct, to lead off the surplus waters of that river during the freshets. The entire cost of the canal, with its breakwater adjuncts at either extremity, is estimated at \$35,000,000. It is well known that a canal here constructed across this Isthmus many centuries before the Christian Era, probably during the early days of Egyptian prosperity. Some vestiges of this work are still visible. The most distinguished European engineers are being sent to the Isthmus, upon the thimble of the canal now contemplated, and a commission composed of such men will be employed to secure its speedy and successful completion.

MAMMOTH SEA ENGINES.—The preparations now making in England for the contemplated attack on Cronstadt, are by far the most extraordinary and immense which have ever been undertaken on any war. One of the English founders are now engaged in casting shells of a magnitude which will seem almost fabulous. These shells are three feet in diameter, and will weigh upwards of a ton and a half when charged. The mortars as presents for the citizens of Cronstadt, will be perfect monsters of guns, and will weigh 35 tons each! These monster shells are to be projected about three miles, and are designed to penetrate the armor of the Cronstadt. It would seem as if no work of man could stand before such projectiles, when propelled by an adequate force.

CALIFORNIA GOLD.—It appears that for some time back the gold received at the east from California has been found more than usually loaded with the small crystals of the natural alloy called *iridiumum*, (the hard and intractable substance used for the tips of the pens of the penmen, says the Washington Star, is infusible, unaltered by other metals, and insoluble to acids. Until lately, the quantity of it has been only about half the weight of the gold of the mines. Last week, however, one deposit of gold weighed six and sixty ounces, contained seven ounces or more of *iridiumum*. From intracellular nature of the work of gold, it is a great annoyance to the workers of gold, to find a metal containing it, and it sometimes causes them heavy losses. It is believed that most of the gold now received from California contains large quantities of this substance.—Chronicle.

ROCK SALT.—An immense bed of salt was lately discovered in Cache Creek canyon, Yolo county. A brine spring, discharging enough water for four mill races, is also found in the canyon.

This formation of rock salt has been known to the native Californians and old settlers of Sonoma for twenty years. It is not to be surpassed by any salt in the world, and exceeds in purity the best of any other, and it is whole Pacific coast. It has the crystalline appearance of loaf sugar, and is as white as snow. It is extremely pure and pleasant to the taste, and is used in many mixtures. It is probably a formation of carbonate of soda, and will one day be of great value as the celebrated mines of Cracow, in Poland, have been known to produce for seven hundred years.—Monterey Sentinel.

GEN BARRELS HAVE BEEN FOUND on the battlefield of Huthartown, in Vermont, that have been buried for seventy-five years.—Some of the cartridges which they contained exhibited considerable violence when they became buried.

COPPER ORE.—The editor of the Placerville American has received some very rich specimens of copper ore from the ground with mountain road surveying party, from an immense deposit in the vicinity of Hope Valley. The American, in commenting upon the fact, says truly says, "We want to open our eyes through and among the Sierras, and new deposits of mineral wealth as yet unestimated will be discovered."

News from the Mines.

Rough & Ready.

We know of no locality, which, at this time, appears to be more prosperous, or more prominent than our neighboring village of Rough & Ready. Though one of the earliest settlements in the mines, the prospect of an exhaustion of the diggings in that vicinity seems to be more distant than ever. The explorations of the past season have served to give more confidence than ever to the stability of the place. Hills which have been heretofore looked upon as worthless, are now known to possess valuable and almost inexhaustible treasures.

Rough & Ready is situated, with reference to her placer diggings, precisely like Grass Valley. A wide and deep ridge of alluvial deposit it distinctly traceable from near Buena Vista Ranch, about six miles east of this place, all the way from the point of beginning to some distance below Rough & Ready. In this entire distance of some twelve miles, which we have traced it ourselves, there are but few breaks—one at Grass Valley, where it is cut through by Wolf Creek, just to the east of the town, and the other at Rough & Ready, where it is cut through, in a precisely similar manner, by the little stream running through the ravine at the east of that town. At both of these localities extensive and rich diggings have been found about the hills which have been denuded of their alluvial deposit by the action of the water of these two streams. The more accessible deposits having been nearly exhausted, in both places, the miners are now beginning to follow the lead each way into the main ridge, before mentioned.

The success of the Companies engaged in this work on the point of the hill, just before entering Rough & Ready from the east, are decidedly satisfactory. The same may be said of the Companies endeavoring to pierce the same hill in the neighborhood of the Randolph Exchange, although little is doing there at present in consequence of the lack of water. Towards the west end of the town, where the main ridge is exposed, several hydraulic companies are running cuts into the hills, with the most flattering evidences of success. On our recent trip to Rough & Ready, we paid a visit to one of these cuts, which is being driven into the hill by the Messrs. Roberts, who are laying out an immense amount of labor and capital in opening their claims, which have been sufficiently prospected to render their value beyond a doubt. Many new ravines in this vicinity are also being worked this season with very good success. On our way to the new quartz mill now about being started a short distance south of the town, we passed a company of miners who had but recently commenced work in one of these ravines, who had but a few minutes before picked up a piece weighing over \$20.

Machine gold is found in this vicinity. A short time since the Messrs. Coulton & Co. picked up from their claims, on Squigler Creek, two pieces, one weighing 10 oz., the other 43 oz., both almost entirely free from gangue. Messrs. Dunham, Hart & Co., in the same vicinity, a few days since, took out a very handsome specimen weighing nearly four ounces. A few days previous to our visit, Davison & Smith, on Randolph Flat, found a lump of gold and quartz which yielded 18 ounces.

The town of Rough & Ready presents at this time quite a lively and animated appearance, which would be greatly increased, if a sufficient quantity of water could be obtained. We are pleased to record these evidences of prosperity among our neighbors, and trust they may go on with increasing success, until their most ardent wishes are realized.

New Discoveries.—New diggings have been struck on Missouri Flat, about thirteen miles up South Fork. They have not been prospected till lately, when several miners went to work on the flat, and found it to pay well—about ten to fifteen dollars to the hand—and they have not got to the bed rock yet. Some excitement about claims in that neighborhood.—Sierra Citizen.

SINGULAR DISCOVERY.—The North California, published at Oroville, on the Feather River, says that a party of men started out from that place a few days since, to prospect in the vicinity of the well known Table Mountain, near that place. The results of their explorations were of a somewhat singular nature, and are thus described by that paper:

"In crossing Table Mountain they observed that in many places the ground seemed hollow, and in one place, on striking upon the ground with a sledge, the echo, was given back with such distinctness, they led them to believe that there would be little difficulty in breaking through. Having procured proper implements, they set to work. After going the depth of four feet, one of the party, who was using a crow bar, was seen suddenly to fall upon his face; upon examination a hole was found about four inches wide, through which the bar had slipped and sunk into the bowels of the mountain. The aperture was immediately enlarged, but it was found that owing to brittleness of the rock, it was exceedingly dangerous working around it. The parties here taken up three thousand feet around the hole, and are busy getting windlasses, &c., to prospect it further. We are told that on Monday they will be ready to commence operations."

We shall watch for further reports from the explorers.

False Mining Reports.

The editor of the "Pacific" who is on a visit to the mines, in writing to his paper, and speaking of the false and exaggerated mining reports that frequently find their way into print, says that the papers, a week or two previous stated that one of the companies on the flat, where he was then writing, consisting of three men, were taking out 13 ounces a week, when in fact they were barely paying expenses. The editor further and to our own knowledge, most truthfully says: "Of all such newspaper paragraphs, we are convinced by our own experienced observation, that five out of six are the merest fabrication; and the readers of newspapers can get no truthful idea of the mines by such reports made by interested persons or to make items for the printer."

Little dependence can be placed upon the information imparted by miners to strangers. It is always a great annoyance to miners to regard to the yield of their claims, and it is generally the custom on such occasions to give answers widely at variance from the truth, but at the same time in such a tame and manner as to give the questioner to understand that he should place no dependence whatever on the answers, and that he is meddling with that which does not concern him. Miners often impart correct information to friends, and any one who has ever spent any considerable time with them, may, though a stranger, readily perceive when they are quizzing him, and when not. In selecting our mining items we rarely give any reports of this kind but when we do copy them, we are particular to note only such as seem to bear external evidences of truthfulness.

NO FORTION.—The Placeriville American says that from a short mile from Spanish Flat, between Placer and Louisville in El Dorado Co. there is a quartz lead known as the Dagget claim, that without exaggeration is acknowledged to be the richest, unworked claim, perhaps in the whole State. The owners are giving it a thorough prospecting, having already raised a hundred tons of quartz, the greater part of it exceedingly rich. We learn they have not as yet contracted for their machinery.

IMPROVEMENTS IN NEVADA COUNTY.—The Nevada Democrat says that Messrs. Cooper & Co. have built an elegant and substantial bridge over the South Yuba, at the point formerly known as the Illinois Ferry. The owner has also constructed a wagon road upon a lofty bluff on each side of the river, which will compare with the best in the country. We learn that this enterprising company have expended about \$17,000 in improvements, and that the completion of their work will require about \$2000 more. This road affords the nearest and best route to many important points, including Esola, Moore's Flat, Orleans Flat, and Minnes-

Curiosities of Water.

Water exists around us to an extent and under conditions which escape the notice of ordinary observers.

WATER IN CONNECTION WITH SOLIDS.

When the dryer boys of the dry sifter 100 lbs. each of alum, carbonate of soda and soap, he obtains in exchange for his money by less than 45 pounds of water in the first lot, sixty-four pounds in the second, and a variable quantity, sometimes amounting to seventy-three and a half pounds in the third. Even the transparent air we breathe contains, in ordinary weather, about five grains of water diffused through each cubic foot of its bulk, and the varied water of the atmosphere is thinner than the solidified water wets the line or oral in which it is absorbed. Of a plaster of Paris slake weighing five pounds, more than one good pound is solidified water. Even the precious opal is but a mass of dirt and water, combined in the proportion of nine grains of the earthy ingredient to one of the fluid. Of an acre of clay land, a foot deep, weighing about one thousand two hundred tons at least four hundred tons are water; and even the great mountain chains with which the globe is clothed, many millions of tons are water solidified into ice.

CHIEF PROPERTY OF WATER DIVESTED OF AIR—BOILER EXPLOSIONS.—In a lecture recently before the Royal Cornwall Polytechnic Society by Robert Smith, F. R. S., attention was directed to some remarkable points in connection with the action of heat on water that contained no air, stating that, arising from this circumstance, as well as from the peculiar condition of the steam generated, we have two very active and predisposing causes of boiler explosions. Water we know in three conditions—as a fluid, as steam and as ice—as we all know from common experience. Water is frozen by the loss of heat necessary to maintain its fluid state; ice formed during agitation contains no air bubbles; but under ordinary circumstances, when the water is cooled, the upper portion is filled with air bubbles in straight lines, as if, in endeavoring to make their escape, they became entangled among the crystals. It is a remarkable fact that water in the process of congelation has the power of rejecting everything; consequently, all the water the air contains is expelled, so that the ice which contains no air, and prevents the access of air to it, will not boil at 212° Fahrenheit. In this state we see the temperature increasing to 280 degrees, 240 degrees, or even 250 degrees, and advancing between 270 degrees and 360 degrees. About these points the whole mass will explode with the violence of gunpowder. This process of steam boilers, and that, during the process of their formation, carries off with it the air, the water in the boiler containing very little remnant of air itself.

It often happens that a boiler explosion occurs after a rest of the engine, and that, when the men return, the feed-water being applied to the water, explosion takes place. The reason we find that if we take water of this peculiar character, bringing it up to 230 degrees, and place a single drop of ordinary water into it, the whole will boil with explosive violence. Suppose that the ordinary water contains no air, and the feed-water is turned on, the entire quantity will then burst into explosive ebullition. We shall probably find, therefore, in connection with boiler explosions, that the absence of air may be attributed many boiler explosions so frequently happening, which otherwise could hardly be accounted for. It may be further stated that if we take a glass of water and add any poison—say corrosive sublimate or a strong acid or even an ardent spirit—and then freeze it, the poison is expelled during the process, we shall find the ice get tasteless, colorless, and inert, and that the poison, the acid, or the spirit, will be gathered into the liquid portion of the ice, and all the body will be perfectly pure. To a knowledge of this fact may be attributed the practice of the Russian nobles, who, when they desired to have more ardent and intoxicating drink than usual, plunge their bottles of wine or spirits into their frozen rivers, until the contents became solidified, and then drink the ardent drop which remains within the centre of the glass.—Scientific American.

THE PROPERTIES AND EFFECTS OF STEAM FUR-THIER CONSIDERED.

A subsequent number of the paper above quoted, in alluding to the frequent causes of Steam Boiler explosions without any apparent cause, says:

Although much has been said and written about steam, yet, owing to its wide application on steamships and railroads in factories and mills, events are continually transpiring which bring to the public eye in some new phase, or in some old one, a subject in new attire. When we take into consideration that there are tens of thousands of steam engines in daily use, and say that we do not very widely know, or any new fact brought to

light, or any common error connected with steam pointed out, must be of interest to a very large number of persons.

The science of steam is not so simple, nor so very generally and profoundly understood as some suppose. There are some very curious phenomena connected with water and steam, ignorance of which has led to the explosions of boilers, by those who had them in charge. Thus, water deprived even of all atmospheric air can be quietly heated far above 212° degrees, the boiling point of water, without generating steam, and it can be made to explode at a high heat with fearful violence. Steam in contact with water in a quiescent state of which we do not doubt is heated, or upwards, without a corresponding effect on the steam gauge. A boiler in such condition, through a stroke of the pump or opening of a valve, instantaneously develops a terrible force, by the superheated steam lapping up the water, and expanding immensely by becoming saturated steam. In the experiments made some years since by the Franklin Institute, steam was heated to 533 deg., while the pressure on the gauge was only 103 lbs., while the steam at 299 deg. was 16 lbs. It is many years since Jacob Perkins made this discovery in relation to superheated steam, and he advanced it as the cause of very violent boiler explosions, and no doubt he was right.

In England there is an "association for the prevention of steam boiler explosions," which yearly holds its members the ablest engineers in that country. Their first annual meeting was held last November, but the yearly report has been but recently published by the Institution of Mechanical Engineers, reports, "the deficiency of water is evidently the most frequent cause of explosions." He also mentions the case of a boiler which exploded after being heated for only indicating 8 lbs. and steam, the latter only indicating 8 lbs. and steam, the latter and yet it was heated so high that the upper part of the furnaces above the water line became so hot, and a block of wood on the top of the boiler, which was placed there to keep it is evident," the report says, "that steam may be raised to a high temperature while in contact with water, and yet remain at a low pressure." This condition can only arise from a deficiency of water in steam, and we may reasonably infer, that if this could by any means be supplied, we should have an almost instantaneous increase of density, and pressure proportionate to the degree of saturation. This will fully account for the difference in intensity of many explosions and others, which occur under the same circumstances after starting the engine."

Persons ignorant of this fact, and who attempt to attribute very violent explosions to the action of steam, and the steam is visible either. Intelligent engineers can know how to obviate explosion by the use of water, by keeping the water continually supplied to the boiler.

We have been thus particularly dwelling the foregoing information for the purpose of making the ignorant and the ignorant and the ignorant may never be held up as an excuse for defects of boilers; or carelessness on the part of those having them in charge.

SINGULAR PHENOMENON.—The Empire City Argus says that during a thunder storm which visited that vicinity on the 27th ult., the electric fluid struck a large bluff of rocks which crosses Dutch Creek, about three miles from town, and getting overcharged with the fluid, the rock burst into pieces.

Fragments weighing from eight to ten tons were thrown into the air to the height of 100 feet, breaking down a dome which crowned the crest of the bluff. The surface of the fragments is blackened on the broken side, and a cavity about the size of a man's head is formed in the solid granite. It has a white crust around the edges, and the sulphurous smell is very great—caused by the decomposition of sulphur of iron, with which the rock is impregnated, and which probably attracted the electricity.

TO EXTRACT GREASE FROM CLOTH.—The following is inalienable: To sixteen ounces of rectified spirits of wine add ten grains of carbolic acid, and mix well. Add a few drops of essential oil of bergamot, and one ounce of anhydrous ether; mix and keep in a glass-stoppered bottle. Apply with a piece of sponge, washing the cloth in the liquid, and the grease is not recent. The mixture emits a peculiarly fragrant odor, and being a fluid soap, obviously composed of oil will be found a perfect solvent of oily matter.

(The above is a good receipt for the purpose stated; of this we judge from the nature of the substances of which it is composed. A shower of rain will remove the grease, but will answer equally as well, may be made of an ounce of liquid ammonia and four drops of carbolic acid, and mix with an equal quantity of water.—Scientific American.)

LANGTON'S PIONEER EXPRESS.
E. A. KENDALL, Agent.
Grass Valley November 17, 1855.